

Appl. No. : 10/626,216
Filed : July 23, 2003

COMMENTS

Claims 1-28 are now pending in the present application, Claims 1, 11, 14, and 20 having been amended, in new Claims 25-28 having been added. The claims set forth above include markings to show the changes made by way of the present amendment, deletions being in ~~strikeout~~ and additions being underlined.

In response to the Office Action mailed August 12, 2004, Applicant respectfully requests the Examiner to reconsider the above-captioned application in view of the foregoing amendments and the following comments.

Anamoto Does Not Anticipate Claims 1-22

Claims 1-22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,934,242 issued to Anamoto. Applicant respectfully traverses the present rejection. However, in order to expedite prosecution of the present application, Applicant has amended Claims 1, 11, 14, and 20. Applicant expressly reserves the right to further prosecute the original version of Claims 1-22 through continuation practice.

Anamoto is directed to an engine lubricant supply control system. In this system of Anamoto, a solenoid-driven oil pump is used to supply lubricant oil to the engine.

At column 6, lines 3-12, Anamoto discloses that “[b]asically, the CPU 34 receives inputs from various sensors to determine the instantaneous lubricant requirements for the engine 21. Basically, these involve at least a reading of engine speed by the speed sensor 66. In addition, other conditions are read such as oil temperature by the detector 67.” Anamoto also discloses that “Load may also be read by such factors as throttle valve setting and various other parameters may be utilized.” However, nowhere does Anamoto disclose or suggest that the amount of lubricant supplied to the engine should change in accordance with changes in engine load.

Rather, as shown in Figure 7, Anamoto discloses calculating engine speed in the step S12, and optionally other conditions. Additionally, Anamoto shows detecting temperature of the lubricant in step S14. These steps are further disclosed in column 6, lines 55-67, in which it is disclosed that engine speed and oil temperature are used to determine the oil supply volume. Again, nowhere does Anamoto specifically disclose that the oil supply volume to be delivered by the oil pump is changed in accordance with engine load.

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In contrast, Claim 1 now recites, in addition to other recitations, “a control device configured to control the lubrication pump, the control device determining an amount of lubricant that is pressurized by the lubrication pump based upon outputs from the first and second sensors to control the lubrication pump, such that the amount of lubricant is changed in accordance with changes in engine load sensed by the second sensor.” Similarly, Claim 11 now recites, among other recitations, “the control device determining a frequency of periodic pressurization by lubrication pump based upon outputs from the first and second sensors to control the lubrication pump, such that the frequency of periodic pressurization is changed in accordance with changes in engine load.” Claims 14 and 20 also now recite similar recitations.

As set forth in the Summary of the Invention in the present application:

One aspect of at least one of the inventions disclosed herein includes the realization that where a solenoid is operated under a duty cycle to provide lubricant to an engine based on engine speed, the amount of lubricant delivered can be inadequate under certain operating conditions. For example, when the engine speed is constant, engine load can still vary. For instance, if the engine powers a land vehicle, the engine load can increase with the vehicle ascends a slope, *i.e.*, goes up a hill. Also, if the engine powers a watercraft, the engine load can increase when the watercraft proceeds against the wind. Under such circumstances, the engine requires a more appropriate amount of lubricant.

The non-limiting graphs of Figures 4, 7, and 8 each illustrate how characteristics of the oil pump operation can be changed in accordance with changes in engine load. It should be noted that the characteristics C, D, and G in Figures 4, 7, and 8, respectively, illustrate typical changes of engine speed and load during operation of the outboard motor 30. However, these figures also illustrate that if engine speed were to remain constant and engine load were to rise, the lubrication characteristics would change in accordance with the changes in engine load.

Nothing in Anamoto suggests this mode of operation. Applicant thus submits that Claims 1, 11, 14, and 20 clearly and non-obviously define over the Anamoto reference. Additionally, Applicant submits that Claims 2-10, 12, 13, 15-19, 21, and 22 also define over the Anamoto reference, not only because they depend from one of the independent Claims 1, 11, 14, or 20, but also on their own merit.

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New Claims 25-28 Do Not Constitute New Matter

Applicant has added new claims 25-28 which recite subject matter fully supported by the specification as originally filed. Thus, no new matter has been introduced. Applicant would like to point out that the Examiner has already recognized that the subject matter of Claims 25-28 is supported by the specification in that there is no outstanding rejection of Claim 23 which recites "means for minimizing the electrical energy used for powering the lubrication pump by reducing the dwell time of the lubricant pump, based on changes in at least one of engine load and engine speed," among other recitations.

Applicant would also like to note that the recitations added to Claims 1, 11, 14, and 20 by way of the present amendment also do not constitute new matter. Rather, as noted above, Claims 4, 7, and 8 each clearly illustrate how, using the non-limiting embodiments illustrated in the figures, the control of the lubrication pump illustrated in Figure 2 is changed based on engine load. Further, in the non-limiting embodiment of Figure 6, engine load is read in step S2. Thus, Applicant submits that no new matter has been introduced.

CONCLUSION

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney in order to resolve such issue promptly.

Respectfully submitted,

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